

WHAT IS CLAIMED IS:

1. A control circuit for a semiconductor device with overheat protecting function, comprising:

a semiconductor element;

5 an overheat protecting means;

a chip to mount the semiconductor element and the overheat protecting means;

a control means to supply a pulse-width modulation control signal having a fixed pulse width to the semiconductor element; and

10 an outputting state detecting means to detect abnormality of output of the semiconductor device with overheat protecting function during an overheat protective operation of the overheat protecting means,

wherein the control means monitors detection output from the outputting state detecting means at a fixed monitoring timing

15 and stops supplying the pulse-width modulation control signal to the semiconductor element when the detection output is generated successively predetermined times or successively during predetermined time.

2. The control circuit for a semiconductor device with overheat protecting function as set forth in claim 1, wherein

20 the semiconductor element is of a MOSFET, and the overheat protecting means includes a temperature detecting circuit, a latch circuit, and a gate breaking circuit.

3. The control circuit for a semiconductor device with overheat protecting function as set forth in claim 1, wherein

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the control means monitors the detection output from the outputting state detecting means at each monitoring timing of the pulse-width modulation control signal's start time plus a fixed time period being shorter than the fixed pulse width.

- 5 4. The control circuit for a semiconductor device with overheat protecting function as set forth in claim 2, wherein

the control means monitors the detection output from the outputting state detecting means at each monitoring timing of the pulse-width modulation control signal's start time plus a fixed time period being shorter than the fixed pulse width.

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